

previous embodiment of FIGS. 1 through 3, except the upper reservoir chamber 44 in this embodiment is filled, for far vision, with air or other suitable inert vapor and the refractive chamber 42 is filled with a liquid. As stated above, when the line of sight is essentially horizontal, the refractive chamber is filled with liquid. As the eye is turned downward, the liquid drains from the refractive chamber 42 into the reservoir chamber 44. Preferably, and as illustrated, the reservoir chamber 44 is anteriorly displaced relative to the refractive chamber 42, thus taking advantage of the lenticular nature of the intraocular lens to enhance the sensitivity of the fluid transfer from one chamber to the next. Also, it should be appreciated that the vent tubes 50 and 52 in this embodiment actually provide for the delivery of the liquid phase as opposed to a transfer of the gaseous phase in the other alternate embodiment.

It is contemplated that the intraocular lens of the present invention can be manufactured out of any of the compositions known in the art and, as previously stated, implanted and fastened to the eye by any of the conventional methods and equipment. The actual construction of the lens will involve the precision manufacturing of two separate half lenses which are assembled into a single intraocular lens with the cavity between the halves subsequently being partially filled with the liquid and then sealed. In addition, the previously mentioned advantages associated with the rapid transfer of liquid in and out of the line of sight and resulting bifocal option, the intraocular lens of the present invention is further contemplated as being readily amenable to achieving neutral buoyancy by virtue of the presence of the partially filled internal space in the lens.

Having thus described and exemplified the preferred embodiments with a certain degree of particularity, it is manifest that many changes can be made within the details of the invention without departing from the spirit and scope of this invention. Therefore, it is to be understood that the invention is not limited to the embodiments set forth herein for purposes of exemplification, but is to be limited only by the scope of the attached claims, including the full range of equivalents to which each element thereof is entitled.

I claim:

1. An intraocular lens for implantation into a human eye comprising:

(a) an optical lens suitable for replacing a human crystalline lens wherein said optical lens consists of an inner transparent wall and an outer transparent wall which define an internal closed space within said lens wherein said internal closed space comprises:

(i) a refractive chamber centrally located in said lens such that it is in the line of sight when said lens is implanted into an eye;

(ii) a reservoir chamber in direct fluid communication with said refractive chamber and located in said lens such that it is in vertical alignment with said refractive chamber when said lens is implanted into an eye but not in the line of sight; and

(iii) at least one vent tube means within said lens and not in the line of sight wherein said vent tube means establishes fluid communication between said reservoir chamber and the far edge of said refractive chamber remote to said reservoir chamber;

(b) an eye attachment means operatively connected to said optical lens and adapted to fasten and retain said optical lens when implanted into the eye; and

(c) a sufficient quantity of a transparent liquid means of predetermined refractive index to partially fill said internally closed space and flow between said refractive chamber and reservoir chamber, in and out of the line of sight, as the angle of inclination of the line of sight changes.

2. An intraocular lens of claim 1 wherein said reservoir chamber is below said refractive chamber and said vent tube means is a pair of fluid conduits leading from the top edge of said refractive chamber to each respective side of the lower reservoir chamber.

3. An intraocular lens of claim 1 wherein said reservoir chamber is above said refractive chamber and said vent tube means is a pair of fluid conduits leading from the lower edge of said refractive chamber to each respective side of the upper reservoir chamber.

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